

Appendix G. DAO Products and Parameters

Version 4.0 (prepared 3/96)

| DAS Data Product Files (Total Volume) | Assimilation, Single Level (8/day) | Assimilation, 24 Mandatory Levels (4/day) | Assimilation, 70 Sigma Levels (4/day) | Increments, 70 Sigma Levels (4/day) | Analysis, 24 Mandatory Level (4/day) | First Guess, 24 Mandatory Levels (4/day) | Observations (4/day) | Fly-through, 24 Mandatory Levels (4/day) | 10-Day FCST, 24 Mandatory Levels* |
|---|---|--|--|--|---|---|---------------------------------|---|--|
| First-Look Analysis, 1 day (3.94 GB) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Final Platform Analysis, 1 day (3.44 GB) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| 10-day Forecast** (19.47 GB) | ✓ | ✓ | ✓ | | | | | | |
| 10-day Forecast, Archived (1.69 GB) | | | | | | | | | ✓ |

| Parameter Group | Parameter | Name (Team) | Units | Assimilation, Single Level (8/day) | Assimilation, 24 Mandatory Levels (4/day) | Assimilation, 70 Sigma Levels (4/day) | Increments, 70 Sigma Levels (4/day) | Analysis, 24 Mandatory Level (4/day) | First Guess, 24 Mandatory Levels (4/day) | Observations (4/day) | Fly-through, 24 Mandatory Levels (4/day) | 10-Day FCST, 24 Mandatory Levels* |
|--|---|--------------------|---------------|---|--|--|--|---|---|---------------------------------|---|--|
| Precipitation and Moisture | | | | | | | | | | | | |
| | Soil Moisture (shallow) | SMSHAL | | X | | | | | | | X (1 level) | |
| | Soil Moisture (root) | SMROOT | | X | | | | | | | X (1 level) | |
| | Soil Moisture (deep) | SMDEEP | | X | | | | | | | X (1 level) | |
| | Surface Evaporation | EVAP | mm/day | X | | | | | | | | |
| | Saturation Surface Specific Humidity | QS | g/kg | X | | | | | | | X (1 level) | |
| | Near-Surface Specific Humidity, 2 meters | Q2M | kg/kg | X | | | | | | X | X (1 level) | |
| | Near-Surface Specific Humidity, 10 meters | Q10M | kg/kg | X | | | | | | X | X (1 level) | |
| | Specific Humidity Profile | SPHU | g/kg | | X | X | X | | | X | X | X |
| | Moisture Change due to Turbulence | TURBQ | g/kg/day | | X | X | | | | | | |
| | Moisture Change due to Moisture | MOISTQ | g/kg/day | | X | X | | | | | | |
| | Vertically Integrated U*Q | VINTUQ | (m/sec)(g/kg) | X | | | | | | | | |
| | Vertically Integrated V*Q | VINTVQ | (m/sec)(g/kg) | X | | | | | | | | |
| | Mixing Ratio Profile | MIXR | g/kg | | | | | X | X | X | | |
| | Mixing Ratio Profile (errors) | MIXRE | g/kg | | | | | X | X | | X | |
| | Relative Humidity Profile | RH | % (0-100) | | | | | X | X | X | | |
| | Precipitable Water | QINT | gm/cm**2 | X | | | | | | X | X (1 level) | |
| | Total Precipitation | PREACC | mm/day | X | | | | | | X | X (1 level) | X (1 level) |
| | Convective Precipitation | PRECON | mm/day | X | | | | | | | X (1 level) | X (1 level) |
| | Snow Depth | SNDPTH | mm | X | | | | | | | X (1 level) | X (1 level) |
| Clouds, Aerosols, & Radiation | | | | | | | | | | | | |
| | 2-D Cloud Fraction | CLDFRC | none (0-1) | X | | | | | | | X (1 level) | X (1 level) |
| | Cloud Mass Flux | CLDMAS | kg*m/sec**2 | | | X | | | | | | |
| | Convective Cloud Detrainment | DTRAIN | kg*m/sec | | | X | | | | | | |
| | Random Overlap Cloud Fraction for LW | CLROLW | none (0-1) | | | X | | | | | X | X |
| | Clear Sky LW Heating Rate | LWCLR | deg/day | | | X | | | | | | |
| | Clear Sky SW Heating Rates | SWCLR | deg/day | | | X | | | | | | |
| | Outgoing LW Radiation | OLR | w/m**2 | X | | | | | | | | |
| | Outgoing LW Radiation, Clear Sky | OLRCLR | w/m**2 | X | | | | | | | | |
| | Incident SW Radiation Top of Atmos | RADSWT | w/m**2 | X | | | | | | | | |
| | Surface LW Flux, Clear Sky | LWGCLR | w/m**2 | X | | | | | | | | |

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|---|---|--|--|--|---|---|---------------------------------|---|--|
| First-Look Analysis, 1 day (3.94 GB) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
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| Parameter Group | Parameter | Name (Team) | Units | Assimilation, Single Level (8/day) | Assimilation, 24 Mandatory Levels (4/day) | Assimilation, 70 Sigma Levels (4/day) | Increments, 70 Sigma Levels (4/day) | Analysis, 24 Mandatory Level (4/day) | First Guess, 24 Mandatory Levels (4/day) | Observations (4/day) | Fly-through, 24 Mandatory Levels (4/day) | 10-Day FCST, 24 Mandatory Levels* |
|---|-------------------------------------|------------------------|--------------|---|--|--|--|---|---|---------------------------------|---|--|
| Clouds, Aerosols, & Radiation (Cont'd) | Outgoing SW Radiation | | | | | | | | | | | |
| | | OSR | w/m**2 | X | | | | | | | X (1 level) | |
| | Outgoing SW Radiation, Clear Sky | OSRCLR | w/m**2 | X | | | | | | | X (1 level) | |
| | Downward IR | LWDNG | w/m**2 | X | | | | | | | | |
| | Downward Vis | VISDNG | w/m**2 | X | | | | | | | | |
| | Albedo - NIR, Difuse | ANIRDF | none (0-1) | X | | | | | | | X (1 level) | |
| | Albedo - NIR, Direct | ANIRDR | none (0-1) | X | | | | | | | X (1 level) | |
| | Albedo - Vis, Difuse | AVISDF | none (0-1) | X | | | | | | | X (1 level) | |
| | Albedo - Vis, Direct | AVISDR | none (0-1) | X | | | | | | | X (1 level) | |
| | Surface Flux Sensible Heat | HFLUX | w/m**2 | X | | | | | | | | |
| | Surface SW Flux, Clear Sky | SWGCLR | w/m**2 | X | | | | | | | | |
| Land & Ocean Surface Temps | Net Upward LW Radiation at Ground | RADLWG | w/m**2 | X | | | | | | | | |
| | Net Downward SW Radiation at Ground | RADSWG | w/m**2 | X | | | | | | | | |
| | | | | | | | | | | | | |
| | Surface Ground Temperature | GTMP | deg K | X | | | | | | X | X (1 level) | X (1 level) |
| | Time Averaged Ground Temperature | GTAVE | deg K | X | | | | | | | | |
| Greenhouse Gases & Trop Chem | Surface Virtual Temperature | TVSFC | deg K | | | | | X | X | | | |
| | Deep Soil Temperature | STDEEP | deg K | X | | | | | | | | |
| Vegetation & Ocean Phytoplankton | | | | | | | | | | | | |
| | N/A | | | | | | | | | | | |
| Global Biological Productivity | | | | | | | | | | | | |
| | N/A | | | | | | | | | | | |
| Radiance & Imagery | | | | | | | | | | | | |
| | N/A | | | | | | | | | | | |

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|-------------------------------|--|------------------------|--------------|---|--|--|--|---|---|---------------------------------|---|--|
| Boundary Conditions | | | | | | | | | | | | |
| | Land, Water, Ice Flags | LWI | none | X | | | | | | | | |
| Air Temperature | | | | | | | | | | | | |
| | Surface Air Temperature | TS | deg K | X | | | | | | X | X (1 level) | X (1 level) |
| | Temperature (2 meters) | T2M | deg K | X | | | | | | X | X (1 level) | X (1 level) |
| | Temperature (10 meters) | T10M | deg K | X | | | | | | X | X (1 level) | X (1 level) |
| | Temperature Profile | TMPU | deg K | | X | X | X | X | X | X | X | X |
| | Temperature change due to turbulence | TURBT | deg/day | | X | X | | | | | | |
| | Temperature change due to moisture | MOISTT | deg/day | | X | X | | | | | | |
| | Temperature change due to LW rad | RADLW | deg/day | | X | X | | | | | | |
| | Temperature change due to SW rad | RADSW | deg/day | | X | X | | | | | | |
| | Vertically Integrated U*T | VINTUT | m/sec deg | X | | | | | | | | |
| | Vertically Integrated V*T | VINTVT | m/sec deg | X | | | | | | | | |
| | Tropopause Temperature | TROPT | deg K | X | | | | | | | X (1 level) | X (1 level) |
| Pressure & Heights | | | | | | | | | | | | |
| | Surface Geopotential Height | PHIS | (m/sec)**2 | X | | | | X (1 level) | X (1 level) | X | X (1 level) | |
| | Surface Pressure - PTOP | PSPTOP | mb | X | | | | | | | X (1 level) | X (1 level) |
| | Time Average Surface Pressure - PTOP | PAVE | mb | X | | | | | | | | |
| | Surface Pressure | PSFC | mb | | | | X (1 level) | X (1 level) | X (1 level) | X | X (1 level) | X (1 level) |
| | Sea Level Pressure | SLP | mb | X | | | | X (1 level) | X (1 level) | X | | X (1 level) |
| | Sea Level Pressure (error) | PRSE | mb | | | | | X (1 level) | X (1 level) | | | |
| | Surface Pressure Tendency | DPDT | mb/day | X | | | | | | | | |
| | Upper Air Geopotential Heights | HGHT | m | | X | | | X | X | X | X | X |
| | Upper Air Geopotential Heights (error) | HGHTe | m | | | | | X | X | | X | |
| | UA Perturbation Geopotential Heights | PHGHT | m | | | X | | | | | | |
| Winds | Tropopause Pressure | TROPP | mb | X | | | | | | | X (1 level) | X (1 level) |
| | | | | | | | | | | | | |
| | Sea Level Winds, U component | SLU | m/sec | | | | | X | X | X | X (1 level) | X (1 level) |
| | Sea Level Winds, V component | SLV | m/sec | | | | | X | X | | X (1 level) | X (1 level) |
| | Surface Wind Speed | WINDS | m/sec | X | | | | | | | X (1 level) | |
| | Vertically Integrated Winds, U comp (Barotropic) | UBAR | m/sec | X | | | | | | | | |

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|----------------------------------|--|------------------------|--------------|---|--|--|--|---|---|---------------------------------|---|--|
| Winds (Continued) | Vertically Integrated Winds, V comp (Barotropic) | VBAR | m/sec | X | | | | | | | | |
| | Upper Level Winds, U component | UWIND | m/sec | | X | X | X | X | X | X | | X |
| | Upper Level Winds, V component | VWIND | m/sec | | X | X | X | X | X | X | | X |
| | Winds at 2 meters, U component | U2M | m/sec | X | | | | | | X | | X (1 level) |
| | Winds at 2 meters, V component | V2M | m/sec | X | | | | | | X | | X (1 level) |
| | Winds at 10 meters, U component | U10M | m/sec | X | | | | | | X | | X (1 level) |
| | Winds at 10 meters, V component | V10M | m/sec | X | | | | | | X | | X (1 level) |
| | Upper Level Winds, U component (error) | UWNDE | m/sec | | | | | X | X | | | |
| | Upper Level Winds, V component (error) | VWNDE | m/sec | | | | | X | X | | | |
| | Turbulent Kinetic Energy | QQ | (m/sec)**2 | | X | X | | | | | | |
| | Momentum Changes due to Turbulence, U component | TURBU | m/sec/day | | X | X | | | | | | |
| | Momentum Changes due to Turbulence, V component | TURBV | m/sec/day | | X | X | | | | | | |
| | Vertical Velocity | OMEGA | mb/day | | X | X | | | | | | |
| | Surface Stress, U component | UFLUX | n/m**2 | X | | | | | | | | |
| | Surface Stress, V component | VFLUX | n/m**2 | X | | | | | | | | |
| | Surface Drag | CT | m/sec | X | | | | | | | | |
| | Surface Drag | CU | m/sec | X | | | | | | | | |
| | U Star | USTAR | m/sec | X | | | | | | | | |
| | PBL Depth | PBL | mb | X | | | | | | | | |
| | Surface Roughness | Z0 | m | X | | | | | | | | |
| Chemical Constituents | | | | | | | | | | | | |
| | Ozone Profile | OZONE | Dobsons | | | | | X | | | X | |
| | CO Profile | CO | ppbv | | | | | X | | | | |

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